IN THE CLAIMS:

1. (Amended) An electronically commutated motor comprising

a stator, a rotor (39), and a program-controlled [microprocessor or microcontroller (11), hereinafter called a] microprocessor, serving to control commutation of the motor;

an apparatus for sensing a time variable (t_H) that is substantially inversely proportional to the rotation speed of the rotor (39);

an apparatus for calculating a time <u>interval</u> (t_TI) dependent on that time variable (t_H);

an apparatus for triggering a motor control interrupt routine [(FIG. 10)] at [a time] <u>an</u> <u>instant</u> offset (t_TI) from a predefined rotor position, that offset corresponding to the time <u>interval</u> (t_TI) dependent on the sensed time variable (t_H);

wherein the motor control interrupt routine contains program steps (S310, S318, S320, S322) for effecting a commutation of the motor.

2. (Amended) The motor according to claim 1, wherein

the motor control interrupt routine [(FIG. 10)] comprises program steps (S304, S306) which prevent a commutation from being effected if the time <u>interval</u> (t_TI) dependent on the sensed time variable is greater than a time span (t_H) presently required by the rotor (39) to travel through a predefined angular distance.

3.(Amended) The motor according to claim 2, [having] <u>further</u> <u>comprising</u>

an apparatus which triggers a rotor position-dependent interrupt routine [(FIG. 8)] at predefined rotor positions.

4. (Amended) The motor according to claim 3, wherein

a timer (CNT_HL), controllable by the rotor position-dependent interrupt routines [(FIG. 8)], is provided, in order to sense the time variable that is substantially inversely proportional to the rotation speed of the rotor.

5. (Amended) The motor according to claim 4, wherein
the timer (CNT_HL) is also configured to trigger a motor control interrupt routine [(FIG. 10)].

6. (Amended) The motor according to claim 5, wherein
the timer (CNT_HL) is loadable, during a rotor position-dependent interrupt [(FIG. 8)], with a first predefined count value (t_B) which corresponds to the time offset (t_TI) dependent on the sensed time variable (t_H);
and which brings about a motor control interrupt [(FIG. 10)] after counting that first predefined count value.

7. (Amended) The motor according to claim 3, [any of the foregoing claims,] wherein
a rotor-position-dependent interrupt [(FIG. 8)] has a higher priority than a motor control interrupt [(FIG. 10)].

8. (Amended) The motor according to claim 4, [any of claims 4 through 7,] wherein
the timer (CNT_HL) is loadable, during a motor control interrupt (FIG. 10: S302), with a predefined count value (t_AR);
and, subsequent to that loading operation, a count is performed until the next rotor position-dependent interrupt [(FIG. 8)], so as to ascertain, by taking the difference between the predefined count value (t_AR) and the counter status (t_E) upon reaching the next rotor position-dependent interrupt [(FIG. 8)], a time offset [(FIG. 7A: t_1)] between these interrupt operations.

9. (Amended) The motor according to claim 8, [wherein] further comprising
an autoreload register (AR) for loading the predefined count value (t_AR), which register stores the first predefined count value (t_TI) and feeds it to the timer (CNT_HL) during the motor control interrupt (FIG. 10) as the predefined count value. [, is provided for loading the predefined count value (t_AR).]

Cancel claims 10-29 and replace by the following new claims 30-51:

30. A method of rotation-speed-dependent commutation of an electronically commutated motor comprising a stator, a rotor and a program-controlled microprocessor serving to control commutation of said motor, comprising the steps of:

a) ascertaining a time variable (t_H) that is substantially inversely proportional to the rotation speed of the rotor;

b) from that time variable (t_H), calculating a numerical value (t_TI) according to a predefined calculation rule;

c) measuring, beginning at a predefined first rotor position, a first time interval corresponding to that calculated numerical value;

d) determining when said first time interval has elapsed, and thereafter triggering a commutation (TN);

e) subsequent to the end of said first time interval, measuring a second time interval (t_1) until said rotor reaches a predefined second rotor position;

f) adding the first and second time intervals, and designating their sum as a time variable (t_H) that is substantially inversely proportional to the rotation speed of the motor.

31. The method of claim 30, further comprising the step of correcting said sum by at least one correction factor.

32. The method according to claim 30, wherein said predefined calculation rule comprises subtracting a predefined time (t_ZW) from said time variable (t_H) that is substantially inversely proportional to the rotation speed of the rotor.

33. The method according to claim 30, further comprising determining whether the first time interval corresponding to the calculated numerical value (t_TI) is greater than a time offset between the predefined first rotor position and the predefined second rotor position, and, if so, directly sensing the time offset between those two rotor positions and using the time offset as said time variable (t_H) that is substantially inversely proportional to the rotation speed of the motor.

34. The method according to claim 30, further comprising comparing said time variable (t_H) that is substantially inversely

proportional to the rotation speed of the motor to a predefined value (t_SZW) corresponding to a minimum rotation speed (S264);

storing a logical value (SZW), corresponding to a result of said comparison result; and

if that logical value (SZW) has a predefined value, suppressing (S304, S306) the triggering of a commutation that would otherwise be accomplished after the first time (t_TI) has elapsed.

35. The method according to claim 30, further comprising

detecting when a predefined rotor position is reached, and

executing a rotor position-dependent interrupt with an interrupt routine at the beginning of which a timer (CNT_HL), providing time measurement,

is stopped (S202), and its instantaneous value is stored in a variable (t_E).

36. The method according to claim 35, further comprising

in the rotor-position-dependent interrupt routine, stopping (S202) the timer (CNT_HL) providing time measurement, then loading the timer with a numerical value (t_TI) previously calculated in accordance with the predefined calculation rule, and thereafter restarting the timer (S238).

37. The method according to claim 36, further comprising

using the time span, between the stopping of the timer (CNT_HL) providing time measurement and the restarting thereof, as a correction factor (t_CORR) during said step of ascertaining the time variable (t_H) that is

substantially inversely proportional to the rotation speed of the motor.

38. The method according to claim 30,

further comprising the steps of

ascertaining said time variable that is substantially inversely proportional to the rotation speed of the rotor;

using said ascertained time variable in calculating (542,544, 546) said first time interval corresponding to the calculated numerical value (t_TI), which is measured from a predefined first rotor position; and

measuring said first time interval, corresponding to said calculated numerical value, beginning at a predetermined rotor position that is reached about one rotor revolution after that ascertaining step.

39. The method according to claim 30, further comprising

determining whether sufficient processor time is available for executing a predetermined non-time critical process step and, if so,

executing a subroutine which performs said predetermined non-time-critical process step.

40. The method according to claim 39, further comprising
calculating said time variable (t_H) that is substantially inversely proportional to the rotation speed of the motor, and calculating the numerical value (t_TI) on which measurement of the first time interval is based,
as part of said subroutine executed when processor time is available.

41. The method according to claim 30, further comprising
loading, from a nonvolatile memory (26) associated with the motor, at least one parameter (t_ZW), necessary for calculations,
into a random-access memory (RAM 25) of the microprocessor (11).

42. The method according to claim 41, further comprising
modifying, via a bus connection (30), at least one value stored in said nonvolatile memory (26).

43. An electronically commutated motor comprising

a stator,

a rotor (39),

a microprocessor which executes a program which controls commutation of the motor (M),

means for starting a timer (CNT_HL) with a predefined start value (t_TI) at at least one predefined rotational position of said rotor (39);

means, responsive to said timer (CNT_HL), for triggering an interrupt in said program of said microprocessor after elapse of a time interval having a duration dependent on the start value (t_TI); and

means for commutating (S318, S320, S322) said motor during said interrupt.

44. The motor according to claim 43, further comprising

means for deriving the start value (t_TI) of the timer (CNT_HL) as a function of a rotation-speed-dependent time interval (t_H) which the rotor (39) has required, in a time period preceding that commutation, to rotate through a predefined rotation angle.

45. The motor according to claim 44, wherein said means for deriving further comprises

means for subtracting a predefined time (t_ZW) from the rotation-speed-dependent time interval (t_H) as part of a calculation of the start value (t_TI).

46. A method of determining a rotation speed-dependent variable in an electronically commutated motor (M) which includes

a stator,

a permanent-magnet rotor (39),

a galvanomagnetic sensor (40) controlled by that rotor, a microprocessor (11), a control program associated with that microprocessor, and a timer (CNT_HL), comprising the steps of:

a) converting an output signal of the galvanomagnetic sensor (40) into a substantially square-wave signal (HALL);

b) sensing, in the microprocessor, predefined signal changes of the square-wave signal (HALL) and converting each signal change into a respective rotor-position-dependent interrupt (FIG. 4: Y);

c) at a rotor-position-dependent interrupt (Y), recording a first counter status (t_0) of the timer;

d) at a rotor position-dependent interrupt (Y) subsequent thereto, recording a second counter status (t_E) of the timer;

e) calculating a difference between the two counter statuses (t_0, t_E) and deriving, from said difference, a value (HL) which corresponds to time required by the rotor (39) to travel through a predefined rotation angle; and using said value (HL) as the rotation-speed-dependent variable.

47. An electronically commutated motor (M) comprising

a stator (38) and a rotor (39),

a program-controlled microprocessor(11), adapted for controlling the commutation of the motor (M); and

a rotor position sensor (40, 41) whose output signal is applied, for purposes of analysis by the microprocessor (11), to an interrupt-capable input of that microprocessor, for processing therein;

said microprocessor furnishing, at at least one output of the microprocessor, a control signal (OUT1, OUT2), for commutation of the motor, that is shifted, with respect to the signal of the rotor position sensor (40, 41), by a shift time, the duration of the shift time being a function of the rotation speed of said motor.

48. The electronically commutated motor (M) according to claim 47, wherein the microcontroller (11) comprises at least one interrupt-capable timer (CNT_HL) with which the at least one output of the microprocessor, serving to deliver the control signal, is influenced.

49. The electronically commutated motor (M) according to claim 48, wherein the timer (CNT_HL) is, in a specific state, automatically reloaded with a value (t_AR) and restarted.

50. The electronically commutated motor (M) according to claim 48, wherein the microprocessor triggers an interrupt at each change in the signal (HALL) of the rotor position sensor (40, 41); and wherein the timer (CNT_HL) and the interrupts are used to measure a value dependent on rotor speed.

51. The electronically commutated motor (M) according to claim 49, wherein the microprocessor triggers an interrupt at each change in the signal (HALL) of the rotor position sensor (40, 41); and wherein the timer (CNT_HL) and the interrupts are used to measure a value dependent on rotor speed.